

RANCHO SANTA ANA BOTANIC GARDEN
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AESCULUS CALIFORNICA
CALIFORNIA BUCKEYE

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RANCHO SANTA ANA BOTANIC GARDEN
of the
NATIVE PLANTS OF CALIFORNIA
Santa Ana Cañon, Orange County, California
Established 1927 in Memory of
JOHN W. BIXBY

AESCULUS CALIFORNICA
CALIFORNIA BUCKEYE

Hippocastanaceae

Horse-Chestnut Family

Deciduous tree or shrub with rounded crown, mostly 15-25 ft. high, but occasionally over 40 ft. Winter buds large, resinous, with several pairs of outer scales. Leaves opposite, digitately 5-7-foliate, on petioles 4-6 in. long; leaflets 3-5 in. long, oblong-lanceolate, acute, pinnately veined, serrate, dark green and glabrous above, lighter green and minutely puberulent on the veins. Inflorescence an upright, terminal panicle or thyse composed of about 150-200 fragrant flowers. Flowers of two sorts: the staminate, most abundant, open first, have short thick styles and abortive ovaries; the perfect have long, slender styles and fertile stamens. Calyx tubular, $\frac{1}{4}$ in. long, 2 or 3-cleft, pinkish. Corolla white or occasionally very pale pink, irregular; petals essentially alike, 4 or 5, each about $\frac{5}{8}$ in. long, lightly puberulent, especially on the distinct claw. Stamens 5-7, filaments white, glabrous, becoming elongated and curved in age, each bearing a 2-celled, versatile, orange anther. Ovary superior, 3-celled, but usually developing only a single seed. Fruits pear-shaped, 2-3 in. long, one to several on each panicle, becoming pendulous; fruit coat grayish, leathery, splitting at maturity and releasing the shiny, rich tan seed, which has a conspicuous, large hilum and fleshy cotyledons. In germination the cotyledons remain within the seed coat; root and stem elongate rapidly; first pair of leaves 3-foliate, the next 4-foliate, and those thereafter are like mature leaves.

The genus *Aesculus* (ancient name of an edible oak; use for this genus not apparent) consists of 20-25 species of North America, southern Europe and Asia. Five species are known from the eastern United States. Several kinds are widely used in cultivation, of which *A. Hippocastanum* (Common Horse-Chestnut) of the Balkans is the most important.

Aesculus californica was discovered by P. E. Botta who visited California over a century ago and who probably collected it at Monterey. His specimen was described in 1834 by Eduard Spach, European botanist (1801-1879), under the name of *Calothyrsus californica*. Thomas Nuttall, famous botanist (1786-1859), transferred the species to *Aesculus* in 1838. *A. californica* appears to be more closely related to Asiatic species than to those of North America.

The California Buckeye (the latter name applied to many species because the fruits resemble eyes of deer) is widespread in the foothills of California, from the head of the Sacramento Valley southward in the Sierras to the Tehachapi and Liebre Mts., where it reaches its southern limit of distribution in the vicinity of Old Fort Tejon, Kern Co., and near Elizabeth Lake, Los Angeles Co. In the Coast Ranges it is rare south of the Santa Lucias, but from there northward is common and frequently grows near the sea. We know it as far north as Humboldt and Trinity Cos., and it has been reported from Siskiyou Co. (Jepson, Fl.

Calif. 2: 454. 1936). It frequently forms bushy thickets along creek beds and on slightly protected north, north-east and north-west hillsides, growing in a variety of soils from heavy clay to decomposed granite.

Aesculus californica is one of our most remarkable trees in that by nature it is not suited to our long dry summers, but has adapted itself to these conditions as efficiently as many of the truly xerophytic plants. In the warmest parts of its range its sticky winter buds begin to swell early in February and by the middle of the month the leaflets are amply expanded, forming a dense light green crown. In May or June the crown bursts forth into bloom, a large specimen often bearing several thousand inflorescences 6-10 in. long, and when in full bloom the white or pinkish flowers make a greater show than those of any other California tree. In late June or early July the first really hot weather burns the foliage, which is generally not shed immediately though it turns brown and dies. However, by August most trees, excepting those on the coast, are completely leafless. The developing fruits, of which usually 1-3 set on each thyrse, are only about $\frac{1}{2}$ in. in diam. at the time of defoliation. Throughout the summer these continue to develop, and by October are nearing maturity. The heavy, soft, gray-brown fruits often hang from every branch, frequently more than a thousand being produced by a good sized tree. The seeds drop, either with or without rupturing the capsule wall which is more or less leathery, and if partially covered with leaves or soil may germinate during the fall, but for the most part they dry out and later rot during the winter months. It will thus be seen that each spring the Buckeye manufactures sufficient food reserves, not only to mature its fruits, but also to enable it to begin new growth the following spring.

Indians formerly ground up the seeds and leached out the bitter, somewhat poisonous properties, utilizing the remaining portion as flour. Cattle are sometimes poisoned by eating the seeds, and beekeepers suffer heavy losses from Buckeye poisoning caused by the nectar, pollen or sap, but the honey is safe to use. The wood is occasionally used for fence posts, which are said to be very durable.

Propagation of *Aesculus californica* is by seeds, preferably gathered in late October or November and planted immediately. With us they germinate within a couple of weeks and grow rapidly with ordinary care. During the first spring and summer they should be grown in a lath-house and planted out in the late fall on a partially protected north, north-east or north-west slope. Irrigation is necessary throughout the first season, but thereafter they should not be watered during the summer. Under our conditions 12 year old plants are just beginning to assume tree-like proportions, but have been blooming since their fifth year.

When in full bloom, the California Buckeye is exceptionally showy, but not suited to gardens where its deciduous nature is objectionable. However, there are many highly prized native specimens in gardens, particularly in the San Francisco Bay Region. In order to assure their survival summer irrigations should be avoided.

CARL B. WOLF.

RANCHO SANTA ANA BOTANIC GARDEN

Dedication of Garden Foundation to the Board of Trustees for the Rancho Santa Ana Botanic Garden of the Native Plants of California:

"THE NATURE, OBJECT AND PURPOSE OF THE INSTITUTION
HEREBY FOUNDED AND TO BE MAINTAINED HEREUNDER.

ITS NATURE: A botanic garden of the native plants of California, herbarium and botanical library, containing living and/or preserved specimens of trees, plants and flowers native to California, and literature relating thereto.

ITS OBJECT: The preservation and improvement of the property now transferred and such property as may hereafter be transferred to the Trustees for those who not only wish to enjoy, but to study, assembled in one accessible locality, native California plants; and for the advancement of science and education with reference to plant life indigenous to the State of California.

ITS PURPOSES: (a) An institution founded primarily for scientific research in the field of local botany.

(b) To preserve the native California flora, try to replenish the depleted supply of some of the rarest plants which are rapidly being exterminated, and bring together in a comparatively small area as complete a collection of the rich store of native California plants as can be grown in this southern section of the state, thereby promoting the general welfare of the people of the state by providing the means for encouraging and carrying on the above mentioned activities in said state and by doing such other things as may be necessary and desirable to carry out the objects hereof."

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